

Buffalo Forge Company

Engineers and Manufacturers

BUFFALO, N. Y.

SPECIFICATIONS

PLANOIDAL FAN

Furnish No. Planoidal (Type "L") three-quarter (or full) housing fan to deliver cu. ft. of air per minute against " static pressure under actual operating conditions.

Blast wheel to be of the radial blade type with blades curved backward at the tips to insure silent operation, stiffened and supported by flanges, and mounted on tee iron arms cast solid with the hub. Wheel to be keyseated and set-screwed to the shaft. Diameter of the blast wheel to be ".

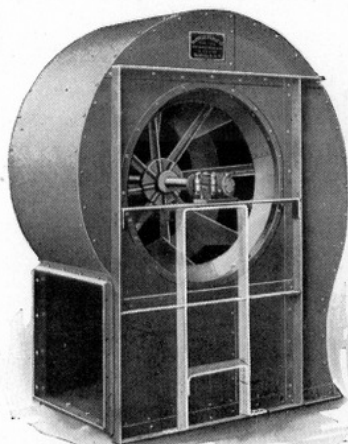
Fan to have one (or two) inlet " diameter, and outlet " x ", The width of the housing is to be in excess of the blast wheel, and is to have a cone inlet extending inward, so as to gradually increase the entering velocity, and gradually diminish the loss due to shock.

Housing to be constructed of the best commercial steel plate No. gauge with riveted lap seams, braced by vertical and horizontal angle irons " x ", and with angle iron frame " x " all around the base, drilled for holding-down bolts. Blast wheel to have No. blades and No. flanges with x tee iron spider arms.

Bearings are to be of the spherical self-aligning type, double ring-oiling, and designed so as to be dust proof and prevent oil being drawn out by suction of air. Safety set collars to be entirely enclosed within the bearings.

Shaft to be of steel, and the blast wheel screwed to same by key and set screws.

Blast wheel to be carefully balanced to prevent vibration.



**Full Housing Planoidal Fan, Left-Hand
Bottom Horizontal Discharge, for
Overhung Pulley or Direct
Connection**

General Information

The Buffalo Planoidal or type "L" Fan is more efficient than any other steel plate fan built with an equal number of blades and will for ordinary heating and ventilating work show no appreciated inferiority to the most efficiently designed multiblade fans.

The design and construction is the result of extensive experiments and tests under all conditions, and we have incorporated a number of features such as improved scroll proportions of the housing, in which the velocity is reduced gradually without loss by shock and inlet cones giving gradual increase of velocity into the elimination of all unnecessary losses and to sudden changes of velocity.

With a Planoidal Fan operating at constant speed, pressure drops off when the fan is delivering more than normal rated capacity having such a characteristic, its tendency is to deliver a more uniform quantity of air per revolution against varying resistance and its capacity is less affected by the throttling effect of closing dampers, various thicknesses of fuel bed, etc., than is the case of multiblade fans.

Planoidal fans are built both as exhausters and blowers, the construction for each being identical except blowers have two inlets of smaller diameter than the one inlet of the exhauster and are not furnished with an inlet cone.

Double width Planoidal Fans which give twice the capacity of a single width fan, are built only as blowers with two inlets.

Catalog No. 200 contains complete accurate labels and data on horsepower requirements and capacities.

Wheel

The blast wheel has 5 to 12 radial blades, depending on the size of fan. Blades are of heavy steel plate riveted to T-iron spider arms which are cast into a heavy hub and are tapering in shape, wider at the inlet than the periphery. Side sheets of wheel are flanged outward at the inlet and riveted to the sides of the blades. The hub is bored, keyseated and secured by large set screws.

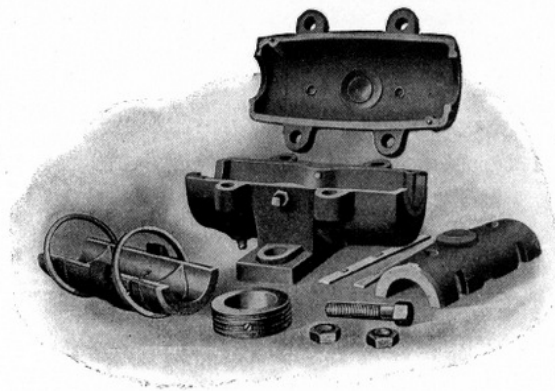
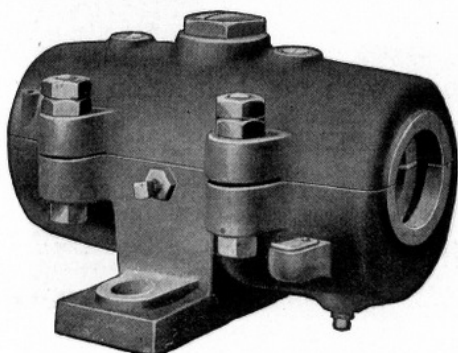
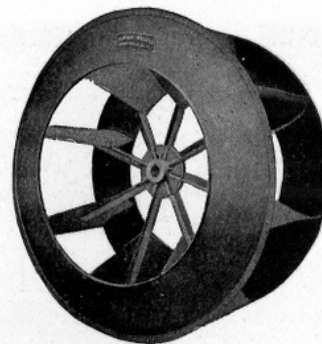
Shaft

The shaft is of open hearth steel designed with a large factor of safety, ground to size, keyseated and accurately finished.

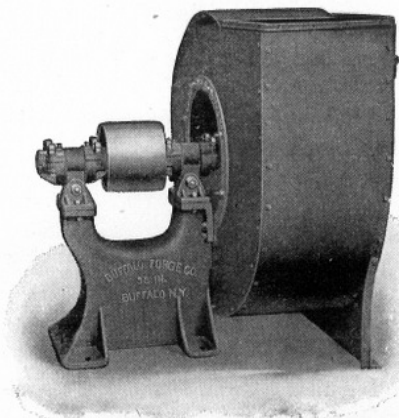
Bearings

The bearings are dust proof and oil tight and consist of a split sleeve lined with babbitt and completely encased in the bearing housing. The sleeve is mounted between spherical surfaces which allow the bearing to adjust itself in every direction and the housing provides a large oil reservoir in which two oilrings dip; overfilling is prevented by the position of the opening through which the oil is supplied and which also indicates the oil level.

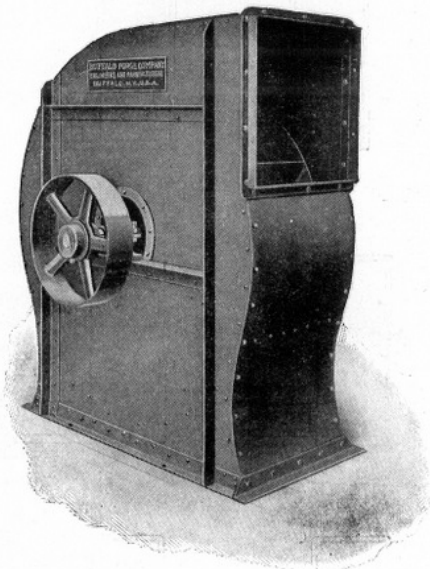
In the interest of safety the thrust collar is placed inside the housing, running against the babbitted shoulder; grooves on the outside surface of the thrust collar throw off all oil and absolutely prevent it from creeping along the shaft and being drawn into the fan.



Pulley Type Fans

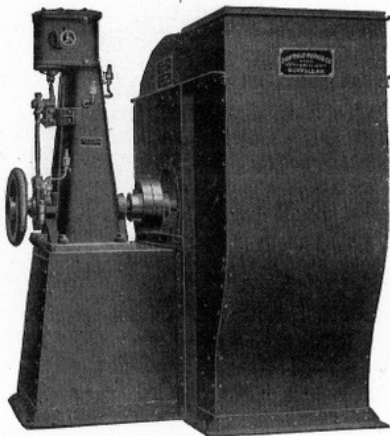


Pulley driven fans are built with either a pulley or an over hung wheel as shown by the accompanying illustrations, the former being standard. With overhung pulley, the blast wheel is mounted between bearings supported by the fan housing.



The overhung wheel is used where a free and unobstructed inlet is desired; in this type both bearings are on the same side of the fan; 60" and smaller fans have both bearings mounted on one pedestal, while 70" to 140" fans have two pedestals which are rigidly connected.

Direct Connected Fans



Planoidal Type "L" Fans may be furnished either direct connected to a steam engine or to an electric motor, the engine drive conveniently permitting wide speed variation.

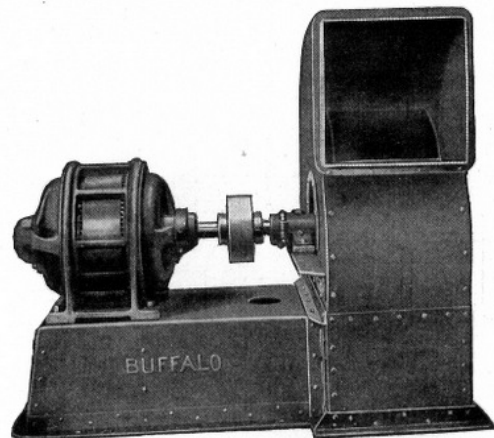
This company has a completely equipped engine department, making no less than nine distinct types, many of which have been designed especially for fan service. When sufficient pressure is not available, or location is such that apparatus requiring minimum attention is required, motor drive affords the solution.

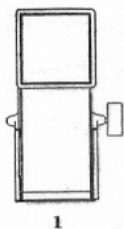
Motor Driven Units

For fans direct connected to either motors or engines, a steel plate base attached to the fan housing may be used, or the fan and motor or engine mounted on separate concrete foundations.

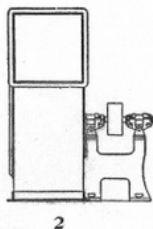
Where separate foundations are not used the bases are rigidly attached to the fan housings and are of box construction, tapering to a broad base and finished off with heavy angle iron. The base is stiffened across the interior with steel ribs and is made with corners rounded so as to avoid an unfinished appearance.

Motor driven exhausters may have the fan-wheel overhung on the motor shaft, which is extended for this purpose, if a coupling may be used, with an outboard bearing. Flexible couplings are supplied when conditions make it advisable and require two bearings for the fan shaft.

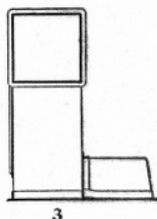




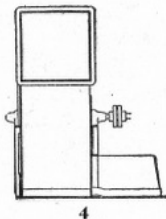
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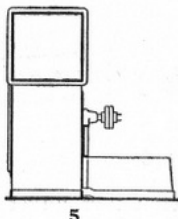
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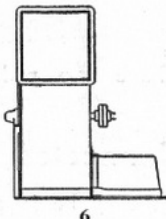
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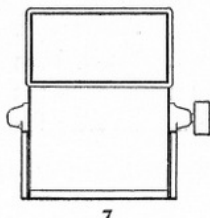
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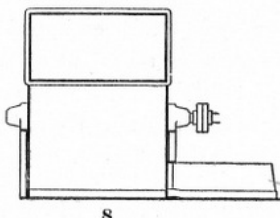
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Standard Arrangements

In ordering fans, specify hand, discharge, type of drive, whether overhung pulley or overhung wheel is wanted, full or three-quarter housing, etc.

The "hand" of a fan is determined by the location of the drive side when one stands facing the outlet end of the fan. If the pulley, motor or engine is on the left, it is called "left hand;" if on the right, "right hand."

No. 1. For Belt Drive

Single fan. Pulley overhung. Includes housing, wheel, shaft, two bearings and pulley.

No. 2. For Belt Drive

Single fan. Wheel overhung. Includes housing, wheel, shaft, two bearings, pedestal and pulley.

No. 3. For Direct Connection

Single fan. Includes housing, wheel and base. Wheel is overhung on engine or motor shaft.

No. 4. For Direct Connection

Single fan. Includes housing, wheel, shaft, bearing in fan inlet, flanged coupling and base.

No. 5. For Direct Connection

Single fan. Includes housing, wheel, shaft, bearing on drive side of fan, flanged coupling and base.

No. 6. For Direct Connection

Single fan. Includes housing, wheel, shaft, two bearings, flexible coupling and base.

No. 7. For Belt Drive

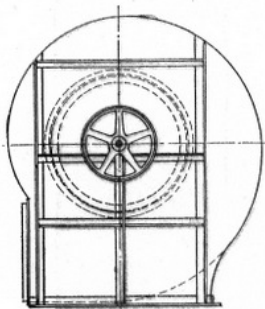
Double fan. Pulley overhung. Includes housing, wheel, shaft, two bearings and pulley.

No. 8. For Direct Connection

Double fan. Includes housing, wheel, shaft, two bearings, couplings and base.

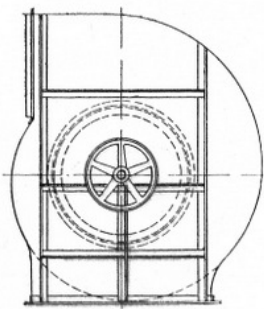
Standard Discharges

The line illustrations below show the standard discharges of Buffalo Planoidal (Type "L") Fans, with full housings.



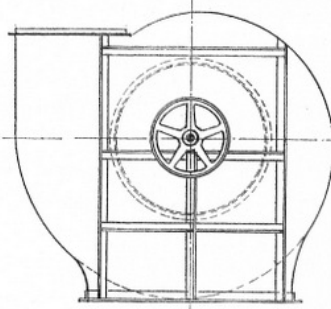
1

Full Housing, Bottom Horizontal



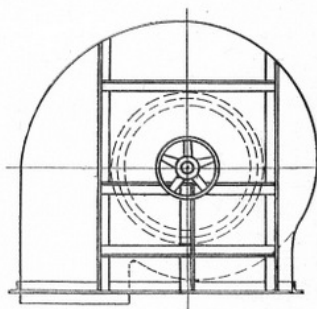
2

Full Housing, Top Horizontal



3

Full Housing, Up Discharge



4

Full Housing, Down Discharge

SCANNED BY: AEM OF LOCKPORT NY USA

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NOTE: THIS DOCUMENT WOULD HAVE SPECS ADDED

ONTO PAGE 1 FOR THE MACHINERY PURCHASED

NOTE: ORIGINAL DOCUMENT HAD WATER DAMAGE